

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: LUMARK

Report Number: P197143

Luminaire Tested: **NAV-AF-01-D-UNV-SL4-8030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197143
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-01-D-UNV-SL4-8030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(1) 80 CRI, 3000K, 800mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE IV SPILL
LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3843 lumens
Efficiency: N/A
Efficacy: 87.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G2

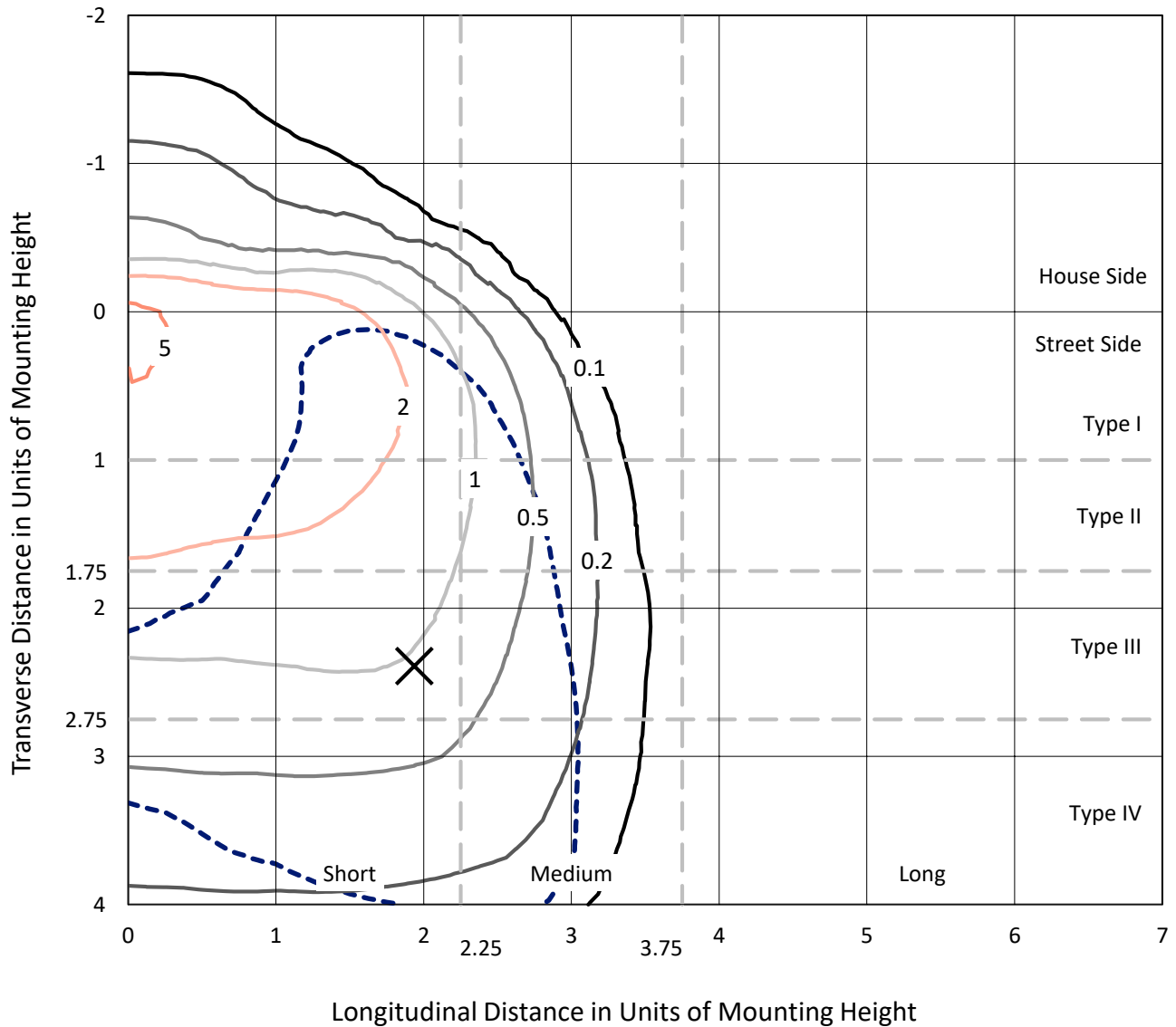
Input Watts (W): 44
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P197143
 CATALOG NUMBER: NAV-AF-01-D-UNV-SL4-8030-800

Iso-Footcandle Lines of Horizontal Illumination

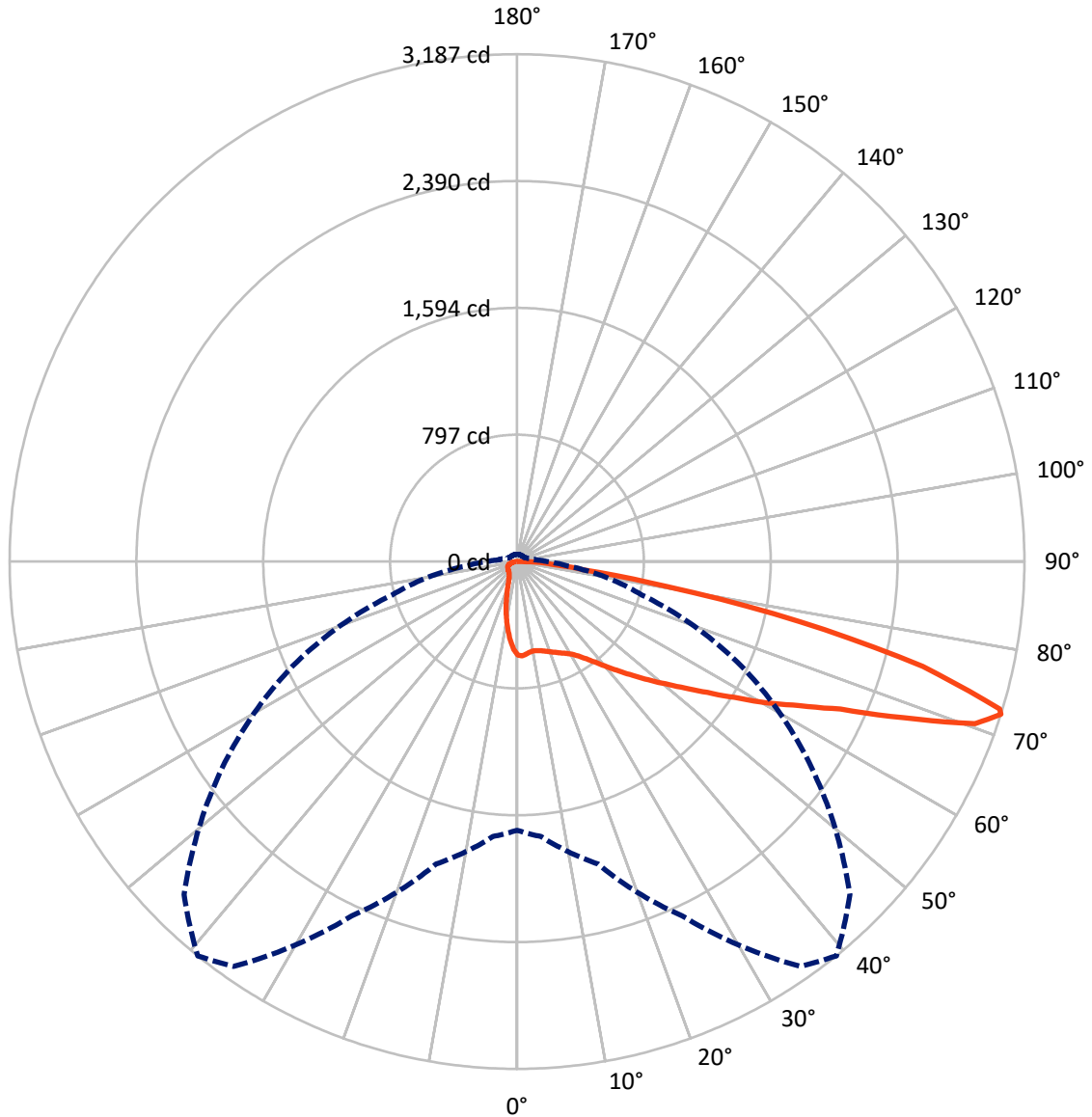
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 5.9 fc
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P197143
CATALOG NUMBER: NAV-AF-01-D-UNV-SL4-8030-800

Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

REPORT NUMBER: P197143

CATALOG NUMBER: NAV-AF-01-D-UNV-SL4-8030-800

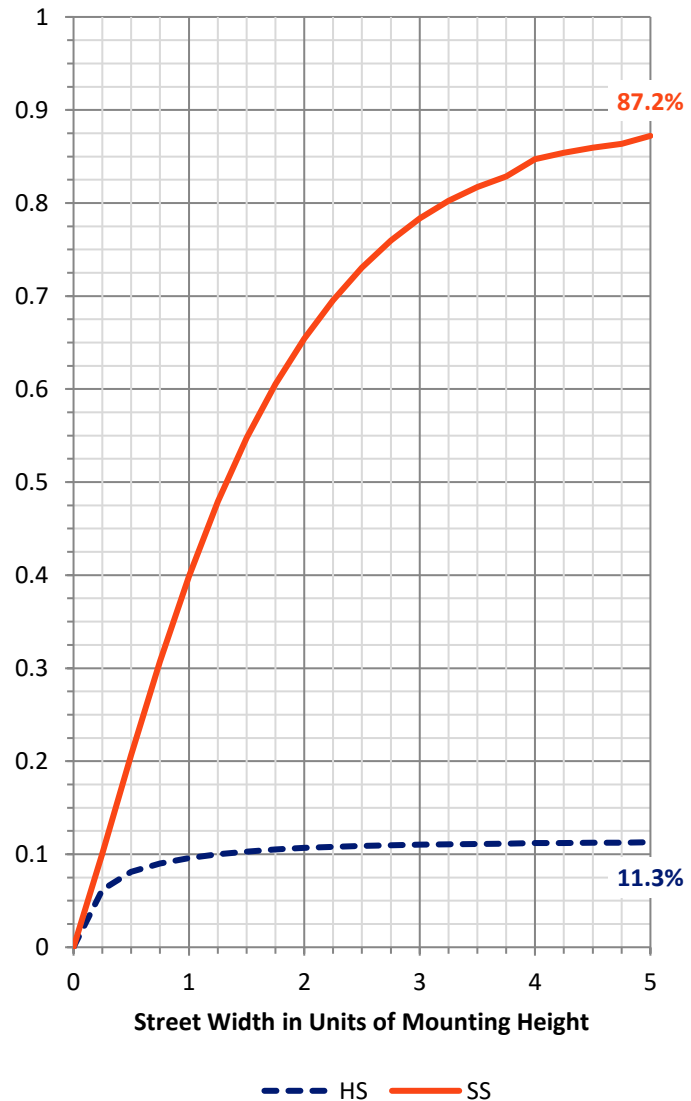
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 440.7 | 0.0 | 440.7 |
| | % Fixture | 11.5 | 0.0 | 11.5 |
| Street Side | Lumens | 3402.3 | 0.0 | 3402.3 |
| | % Fixture | 88.5 | 0.0 | 88.5 |
| Total | Lumens | 3843.0 | 0.0 | 3843.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 50.4 | 1.3 |
| 10°-20° | 126.7 | 3.3 |
| 20°-30° | 197.5 | 5.1 |
| 30°-40° | 304.1 | 7.9 |
| 40°-50° | 495.7 | 12.9 |
| 50°-60° | 770.3 | 20.0 |
| 60°-70° | 1031.0 | 26.8 |
| 70°-80° | 741.5 | 19.3 |
| 80°-90° | 125.7 | 3.3 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 3843.0 | 100.0 |
| 0°-180° | 3843.0 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P197143

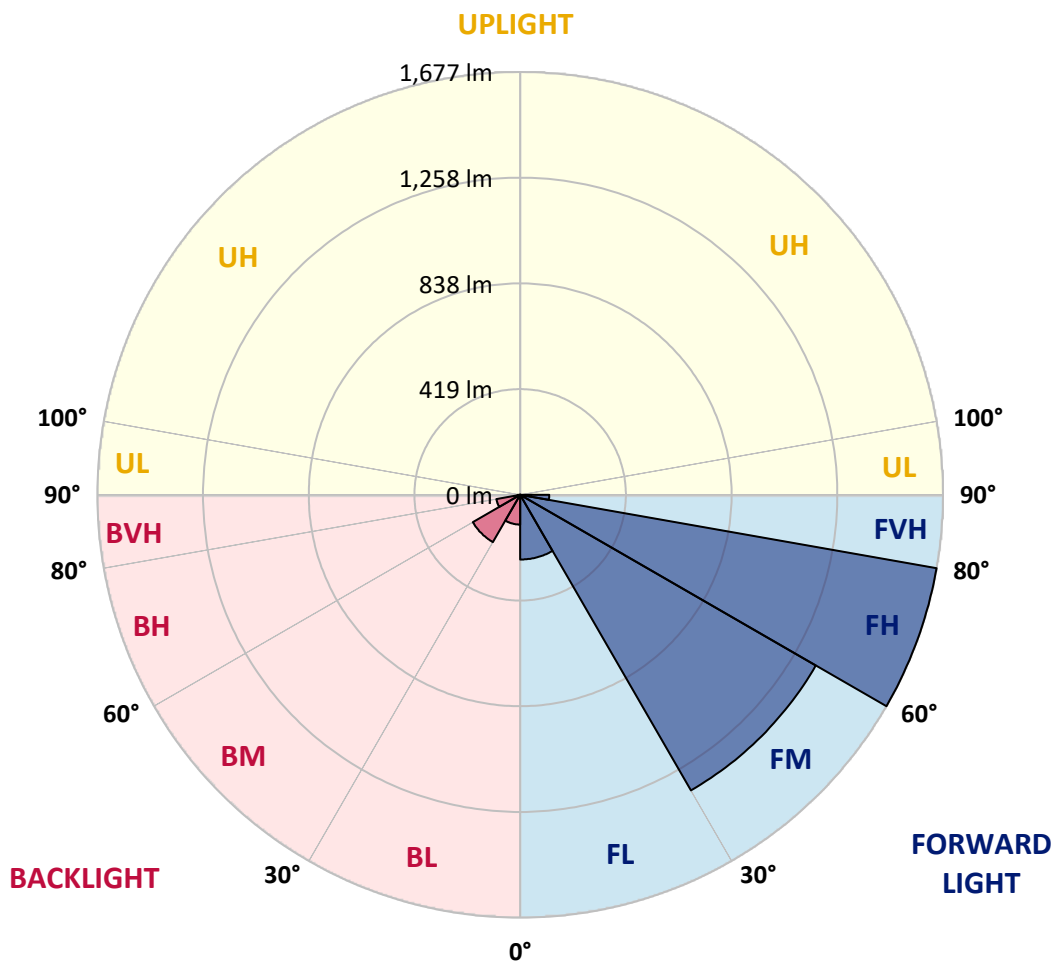
CATALOG NUMBER: NAV-AF-01-D-UNV-SL4-8030-800

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 256.7 | 6.7 | | | |
| FM | (30°-60°) | 1353.6 | 35.2 | | | |
| FH | (60°-80°) | 1676.8 | 43.6 | | | G1/1800 |
| FVH | (80°-90°) | 115.3 | 3.0 | | | G2/225 |
| BL | (0°-30°) | 118.0 | 3.1 | B1/500 | | |
| BM | (30°-60°) | 216.6 | 5.6 | B0/220 | | |
| BH | (60°-80°) | 95.7 | 2.5 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 10.4 | 0.3 | | | G1/100 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B1-U0-G2

Type IV Short





REPORT NUMBER: P197143

CATALOG NUMBER: NAV-AF-01-D-UNV-SL4-8030-800

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 39° | 45° | 55° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 586.9 | 586.9 | 586.9 | 586.9 | 586.9 | 586.9 | 586.9 | 586.9 | 586.9 | 586.9 | 586.9 |
| 2.5° | 599.5 | 599.8 | 599.0 | 596.7 | 594.6 | 593.6 | 591.8 | 588.7 | 584.6 | 581.7 | 579.4 |
| 5° | 593.9 | 594.6 | 594.1 | 590.2 | 586.6 | 584.6 | 581.7 | 577.3 | 571.9 | 569.6 | 564.2 |
| 7.5° | 589.5 | 590.0 | 588.4 | 584.1 | 577.1 | 574.5 | 569.4 | 563.7 | 558.8 | 555.4 | 549.0 |
| 10° | 586.4 | 586.9 | 585.6 | 581.2 | 573.5 | 570.4 | 564.2 | 558.0 | 551.6 | 547.4 | 540.2 |
| 12.5° | 582.0 | 583.0 | 583.0 | 581.0 | 575.8 | 573.7 | 567.5 | 560.8 | 554.9 | 550.5 | 541.5 |
| 15° | 581.2 | 582.5 | 584.8 | 584.6 | 583.0 | 581.5 | 576.6 | 569.9 | 564.7 | 559.5 | 548.5 |
| 17.5° | 587.7 | 590.5 | 595.2 | 596.7 | 595.7 | 592.3 | 586.6 | 580.4 | 574.8 | 569.9 | 556.2 |
| 20° | 603.9 | 605.5 | 612.4 | 615.5 | 610.4 | 605.5 | 598.0 | 590.0 | 584.8 | 581.0 | 563.4 |
| 22.5° | 628.4 | 630.5 | 636.2 | 636.4 | 625.6 | 619.7 | 610.1 | 600.3 | 595.4 | 593.9 | 573.2 |
| 25° | 667.6 | 667.1 | 668.7 | 662.2 | 642.6 | 635.7 | 624.0 | 612.7 | 609.3 | 612.4 | 587.7 |
| 27.5° | 714.6 | 713.3 | 708.4 | 691.6 | 662.0 | 652.9 | 639.0 | 628.9 | 628.9 | 636.2 | 607.3 |
| 30° | 768.8 | 767.5 | 751.5 | 723.4 | 684.9 | 674.6 | 659.9 | 649.3 | 654.7 | 668.7 | 633.8 |
| 32.5° | 826.0 | 821.4 | 799.0 | 761.3 | 717.7 | 706.3 | 692.1 | 681.3 | 691.6 | 715.4 | 672.0 |
| 35° | 880.0 | 877.4 | 849.8 | 805.1 | 760.0 | 750.5 | 740.6 | 727.2 | 743.7 | 780.6 | 725.9 |
| 37.5° | 935.7 | 933.6 | 899.8 | 852.4 | 811.6 | 805.1 | 796.9 | 787.6 | 814.2 | 862.7 | 799.0 |
| 40° | 997.9 | 993.7 | 951.2 | 903.7 | 871.7 | 868.6 | 864.2 | 861.6 | 904.5 | 976.7 | 891.3 |
| 42.5° | 1068.3 | 1060.3 | 1005.3 | 960.2 | 937.2 | 939.8 | 937.5 | 947.8 | 1013.3 | 1108.3 | 1001.2 |
| 45° | 1148.8 | 1132.8 | 1059.2 | 1020.3 | 1009.7 | 1020.0 | 1024.9 | 1051.3 | 1142.1 | 1260.2 | 1124.0 |
| 47.5° | 1224.1 | 1203.5 | 1118.3 | 1085.6 | 1091.5 | 1109.3 | 1123.2 | 1169.7 | 1283.2 | 1410.4 | 1249.4 |
| 50° | 1293.5 | 1270.3 | 1181.5 | 1153.2 | 1182.0 | 1207.3 | 1236.2 | 1301.7 | 1433.3 | 1564.9 | 1364.4 |
| 52.5° | 1344.8 | 1328.1 | 1244.7 | 1226.9 | 1286.0 | 1319.5 | 1365.7 | 1448.5 | 1585.0 | 1712.2 | 1467.1 |
| 55° | 1384.6 | 1375.5 | 1306.4 | 1311.5 | 1403.6 | 1451.6 | 1507.6 | 1602.8 | 1745.5 | 1844.3 | 1549.7 |
| 57.5° | 1430.5 | 1423.8 | 1376.8 | 1413.7 | 1549.7 | 1610.0 | 1676.1 | 1781.8 | 1898.2 | 1960.6 | 1614.4 |
| 60° | 1479.0 | 1479.0 | 1455.2 | 1536.8 | 1732.3 | 1801.4 | 1867.2 | 1949.5 | 2050.4 | 2065.4 | 1640.7 |
| 62.5° | 1515.6 | 1525.2 | 1533.7 | 1667.8 | 1905.7 | 1991.6 | 2063.8 | 2142.7 | 2208.0 | 2116.9 | 1578.8 |
| 65° | 1568.8 | 1589.1 | 1637.1 | 1819.2 | 2120.3 | 2232.8 | 2330.3 | 2396.6 | 2335.7 | 2075.9 | 1376.8 |
| 67.5° | 1660.1 | 1690.3 | 1792.4 | 2044.7 | 2449.0 | 2617.4 | 2712.1 | 2597.6 | 2310.7 | 1817.7 | 1054.6 |
| 70° | 1742.4 | 1784.9 | 1959.6 | 2330.8 | 2876.2 | 3051.1 | 3007.5 | 2550.9 | 2012.5 | 1332.4 | 648.8 |
| 72° | 1687.7 | 1734.1 | 1967.3 | 2455.4 | 3104.5 | 3187.0 | 2957.2 | 2260.6 | 1555.1 | 813.1 | 319.9 |
| 72.5° | 1651.8 | 1700.1 | 1942.3 | 2452.3 | 3110.7 | 3169.7 | 2887.3 | 2145.3 | 1411.6 | 711.5 | 258.7 |
| 75° | 1379.9 | 1421.2 | 1670.1 | 2173.4 | 2741.3 | 2632.9 | 2253.2 | 1388.4 | 648.8 | 229.9 | 133.1 |
| 77.5° | 901.1 | 932.6 | 1151.6 | 1505.8 | 1920.1 | 1815.9 | 1371.4 | 650.1 | 243.3 | 139.6 | 100.1 |
| 80° | 452.7 | 475.2 | 616.3 | 791.7 | 1036.3 | 953.5 | 633.1 | 314.5 | 162.8 | 100.9 | 78.7 |
| 82.5° | 315.0 | 335.6 | 424.4 | 404.2 | 433.1 | 419.2 | 297.7 | 262.4 | 121.8 | 63.7 | 41.3 |
| 85° | 264.2 | 285.6 | 351.1 | 288.2 | 235.8 | 214.9 | 213.3 | 247.9 | 80.5 | 31.5 | 34.8 |
| 87.5° | 230.4 | 262.9 | 289.7 | 210.5 | 161.8 | 142.7 | 157.1 | 227.3 | 25.5 | 17.3 | 10.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P197143

CATALOG NUMBER: NAV-AF-01-D-UNV-SL4-8030-800

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 586.9 | 586.9 | 586.9 | 586.9 | 586.9 | 586.9 | 586.9 | 586.9 | 586.9 | 586.9 | 586.9 |
| 2.5° | 575.5 | 574.8 | 570.9 | 565.0 | 560.6 | 557.7 | 552.3 | 552.1 | 552.6 | 547.9 | 549.7 |
| 5° | 559.3 | 556.2 | 546.1 | 532.5 | 521.4 | 510.8 | 499.2 | 495.3 | 492.0 | 485.0 | 485.8 |
| 7.5° | 542.3 | 536.8 | 519.3 | 496.9 | 475.4 | 455.8 | 436.5 | 427.0 | 419.7 | 410.7 | 410.7 |
| 10° | 532.2 | 523.7 | 496.9 | 464.1 | 430.0 | 401.4 | 372.5 | 355.2 | 342.6 | 331.0 | 330.2 |
| 12.5° | 531.7 | 518.8 | 481.4 | 436.2 | 389.5 | 349.3 | 309.8 | 283.3 | 264.4 | 250.8 | 249.5 |
| 15° | 535.8 | 517.8 | 468.5 | 410.2 | 351.4 | 299.0 | 250.2 | 216.4 | 192.4 | 177.2 | 175.7 |
| 17.5° | 539.4 | 516.5 | 454.6 | 382.8 | 314.2 | 250.5 | 196.3 | 161.2 | 138.5 | 126.2 | 124.9 |
| 20° | 542.8 | 513.6 | 436.8 | 353.9 | 273.2 | 205.1 | 153.5 | 125.1 | 110.2 | 103.2 | 102.4 |
| 22.5° | 547.7 | 511.1 | 418.2 | 321.4 | 233.0 | 166.9 | 126.7 | 106.3 | 98.3 | 94.9 | 94.4 |
| 25° | 555.7 | 511.3 | 400.1 | 288.2 | 196.1 | 139.0 | 109.6 | 97.0 | 92.6 | 90.3 | 90.3 |
| 27.5° | 567.3 | 514.4 | 382.3 | 254.4 | 164.8 | 120.0 | 99.6 | 92.1 | 89.3 | 87.5 | 86.9 |
| 30° | 584.3 | 520.1 | 363.5 | 222.4 | 140.1 | 106.8 | 93.6 | 89.0 | 86.7 | 85.1 | 84.9 |
| 32.5° | 609.1 | 530.1 | 343.6 | 193.2 | 121.2 | 97.5 | 89.3 | 86.4 | 84.6 | 83.3 | 83.1 |
| 35° | 646.0 | 547.9 | 324.3 | 168.5 | 107.8 | 90.8 | 85.6 | 83.3 | 82.3 | 81.8 | 81.5 |
| 37.5° | 700.1 | 576.6 | 306.0 | 149.1 | 99.1 | 86.4 | 82.0 | 80.7 | 80.2 | 80.2 | 80.2 |
| 40° | 768.3 | 614.2 | 289.4 | 135.4 | 94.2 | 83.1 | 79.5 | 78.4 | 78.4 | 78.7 | 78.7 |
| 42.5° | 851.1 | 661.5 | 275.3 | 126.2 | 91.3 | 80.7 | 77.7 | 77.1 | 76.9 | 76.9 | 77.1 |
| 45° | 947.3 | 717.2 | 266.5 | 118.9 | 89.3 | 79.5 | 76.4 | 76.1 | 75.1 | 74.6 | 74.6 |
| 47.5° | 1044.0 | 776.8 | 266.0 | 114.8 | 86.7 | 77.9 | 75.1 | 75.1 | 73.0 | 72.0 | 72.2 |
| 50° | 1134.3 | 830.2 | 271.6 | 113.8 | 85.1 | 75.6 | 73.8 | 74.0 | 71.2 | 69.9 | 69.7 |
| 52.5° | 1207.1 | 870.9 | 278.6 | 115.1 | 85.1 | 73.5 | 71.5 | 72.7 | 69.7 | 68.1 | 67.8 |
| 55° | 1263.3 | 899.3 | 281.2 | 117.9 | 86.2 | 71.7 | 69.4 | 71.5 | 69.1 | 67.1 | 67.1 |
| 57.5° | 1303.6 | 908.3 | 270.1 | 119.2 | 87.7 | 71.5 | 67.3 | 71.2 | 69.9 | 67.3 | 67.3 |
| 60° | 1288.8 | 856.0 | 228.8 | 114.3 | 87.5 | 70.9 | 65.8 | 71.7 | 72.5 | 69.7 | 69.7 |
| 62.5° | 1174.0 | 716.1 | 183.7 | 103.2 | 83.1 | 69.1 | 64.0 | 71.2 | 74.3 | 73.3 | 72.7 |
| 65° | 955.8 | 525.2 | 142.4 | 90.0 | 75.6 | 65.3 | 60.1 | 66.6 | 70.2 | 71.2 | 71.5 |
| 67.5° | 673.6 | 332.5 | 110.7 | 76.6 | 66.3 | 59.6 | 55.7 | 58.8 | 60.1 | 60.6 | 61.7 |
| 70° | 368.4 | 180.1 | 88.0 | 64.5 | 56.8 | 53.9 | 51.1 | 51.3 | 50.8 | 50.3 | 50.8 |
| 72° | 185.0 | 117.6 | 74.3 | 56.0 | 50.3 | 48.5 | 47.2 | 46.4 | 46.4 | 45.7 | 45.9 |
| 72.5° | 159.2 | 109.4 | 71.7 | 53.9 | 48.8 | 47.2 | 46.2 | 45.4 | 45.1 | 44.6 | 44.9 |
| 75° | 106.0 | 86.7 | 59.9 | 45.1 | 41.5 | 40.5 | 41.0 | 40.2 | 40.5 | 40.0 | 40.2 |
| 77.5° | 85.6 | 74.6 | 50.8 | 38.2 | 35.6 | 34.1 | 35.1 | 35.3 | 35.9 | 35.3 | 35.1 |
| 80° | 71.7 | 63.5 | 42.6 | 31.5 | 29.7 | 28.4 | 28.9 | 30.7 | 31.0 | 29.4 | 29.2 |
| 82.5° | 46.4 | 51.1 | 33.5 | 24.5 | 22.7 | 22.2 | 23.5 | 25.3 | 25.8 | 23.7 | 23.2 |
| 85° | 39.0 | 41.0 | 24.2 | 16.8 | 15.0 | 14.4 | 17.0 | 18.8 | 20.1 | 18.1 | 17.5 |
| 87.5° | 10.8 | 20.1 | 11.9 | 8.0 | 6.7 | 6.7 | 8.3 | 9.8 | 11.6 | 11.9 | 11.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)